Motion Control System
DF64 Procedure Development
ACS DepartureModing
December 5, 1997

Identification Section:

Procedure Name:	ACS_Departure_Moding.
Applicability:	Departure of Flight 3A.
Frequency:	This procedure is performed during the departure sequence.
Objective:	Operational sequence used to configure and automatically mode the Station to RS attitude control upon Orbiter departure.
Description:	This procedure enables NCS software monitoring of the APAS switches then turns on the LED mode indication (i.e., RS ACS mode status) lighting. Monitoring of the separation signals and ACS mode change
Crew Required:	One (non-specified) orbiter crew member is required for visual status check.
Power:	N/A
Data:	Required telemetry is given in the procedure.
Duration:	Concurrent with integrated and departure proxops timeline.
Location:	PMA2.
Parts:	PMA2 APAS docking mechanisms; Node 1MDMs; RS segment MDMs and Propulsion system.
Materials:	N/A
Tools:	N/A
Constraints:	None
Assumptions:	Orbiter provides attitude control for the mated stack.
Reference Materials:	S684-10174 - 5/15/96; MDC 95H0250B 3/15/96 (Russian data), Pass2-100% 2A/3A, Engineering release cycle, and Standard Out Command and Telemetry files.

ACS DEPARTURE MODING

1. ENABLE DEPARTURE SWITCH MONITORING FOR ACS MODING

PCS MCS: ACS Moding

ACS Moding

'Departure'

sel PMA2 Departure Response SW
'Primary NCS'
cmd Enable Arm
√Arm Status - Arm
cmd Enable
√Arm Status - Disarm
√ Departure SW - Ena

'Secondary NCS'
cmd Enable Arm
√Arm Status - Arm
cmd Enable
√Arm Status - Disarm
√Departure SW - Ena

2. VERIFY DEPARTURE EVENT SOFTWARE STATUS

'Departure'

√Departure Event Primary, Secondary NCS - Blank

3. ENABLE APAS LED LIGHTING

NOTE
Each of the primary and secondary commands turns on two of the four LED ACS indication lights (i.e., 4 total). LED configurations: On - Active Attitude Control, Off - Power Off, Flash - ISS in Free Drift.

'ACS Configuration'

sel LED Control SW
'Primary NCS'
cmd Enable
√LED Control SW - Ena
√PMA2 LED State - Flash

sel LED Control SW
'Secondary NCS'
cmd Enable
√LED Control SW - Ena
√PMA2 LED State - Flash

Visual check by Orbiter crew that APAS LEDs are flashing (-Z windows)

4. MONITOR AND VERIFY NCS SEPARATION SIGNALS AND VERIFY ORBITER DEPARTURE AND POST SEPARATION LED MODE CHANGE

Perform Config C&DH for Orbiter Undocking, (C&DH:), All, Then

Verify **MCC-H/MCC-M** Go for Orbiter Departure

NOTE

1. Monitor the change in parameter values during Orbiter undocking. At Orbiter separation (i.e., Undocking Complete activated), the Departure Event flag signals the start of the attitude control countdown timer.

2. Monitor the timer. This timer is set to start when the primary Departure Event is received: when the countdown timer reaches zero, it prompts the FGB to reactivate its ACS system (this takes approximately 30 minutes).

3. For flights 2A through 3A, Orbiter crew interface will be lost at OIU disconnect. The following will be conducted via ground control.

PCS MCS: ACS Moding

ACS Moding

'Departure'

√PMA2 Interface Sealed Primary, Secondary NCS - Blank

√PMA2 Undocking Complete Primary, Secondary NCS - X

√Departure Event Primary NCS - X
√Countdown Timer Primary NCS - (Decreasing from preset back off time)

√Departure Event Secondary NCS - X
√Countdown Timer Secondary NCS - (Decreasing from preset back off time)

Visual check by Orbiter crew that APAS LEDs are On (-Z windows)

5. VERIFY RUSSIAN SEGMANT MODE STATUS

'ACS Configuration'

√PMA2 LED State Primary, Secondary NCS - On
√RS Mode Primary, Secondary NCS - Cntl